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A Method and Apparatus for  
Selling with Short-Bidding on Goods

Technical Field of the Invention

[0001] The present invention pertains to electronic auction environments for sellers of a good for sale where purchasers bid on the good in attempts to buy the posted good. In particular, the present invention pertains to software apparatuses that track all bids for a seller of a good so that the seller can know at any point in time during the sale of a good, the price or prices that buyers are willing to pay for the item even when they are not willing to pay the posted price. All of this takes place during a live auction. When a bid is less than the price posted, this is known as a "Short-Bid". Such software apparatuses are embodied as a Short-Bidding Auction Manager and associated software subsystems and files associated therewith.

Background of the Invention

[0002] Electronic Auctions have become commonplace with the many Auction portals deployed on the Web. Many Auction portals such as eBay, Yahoo, or uBid provide auction models for assisting sellers of large supplies of an item. eBay, for example, offers a "Dutch" Auction wherein the top N bidders will win the N quantity of a good for sale at auction.

[0003] A well-known drawback of common auction selling, in particular large or infinite supply selling is that often not all of a supply is sold. This often leaves the seller with inventory that he does not want. Meanwhile, many purchasers may have come to the auction posting and not bothered to bid because the starting bid price was a little or a lot too high for them. However, many potential purchasers would have bid if the price were even just a small amount less. The seller has no way of knowing that he could have sold more inventory if the price was lowered only a little.

[0004] The failure to sell inventory is even more interesting when the good being sold may be easily copied and/or downloaded an infinite number of times electronically. In this infinite supply case, the flexibility to drop the price on the good is much greater since copying bits is all that needs to be performed. The seller would definitely like to know what lower prices 5 purchasers were willing to pay and make an intelligent decision on whether or not to let more copies be purchased and downloaded. While the profit on each additional copy sold is the price offered, the seller must balance this lowered price with the fact that word will spread that the electronic good was obtainable at the lowered prices. Similar decision processes are available to the large supplier of real goods as well. However, the decision and the timing of it is up to the 10 seller. Current auction software apparatuses do not provide the means to determine what lower bidders would have been willing to pay. As a result, the seller has to guess what minimum price to set on a new auction, without any useful potential buyer information, in order to dump the rest of their inventory.

[0005] In light of the above, there is a need for methods and apparatus in an auction 15 selling environment for the means to determine what purchasers would pay for a good even when they do not agree to the current minimum price. This will provide a greater opportunity for sellers to dispose of more inventory and allow them to decide on exactly which specific lower prices make sense for the seller.

## Summary of the Invention

[0006] Embodiments of the present invention advantageously satisfy the above-identified need in the art. In particular, one embodiment of the present invention recognizes that in order to determine what buyers are willing to pay for a good, the present invention must provide the means for buyers to enter bids no matter how low the bid is. The present invention provides the seller methods and apparatus to review and analyze current bids in order to determine if it makes sense for the seller to execute a transaction at a specific lower price.

[0007] Specifically, one embodiment of the present invention is a Short-Bidding Auction Manager that collects all potential purchaser “short-bids” on a good for sale at auction and provides the seller the ability to review and analyze some or all bids, the Short-Bidding Auction Manager comprising: (a) a User Account Manager and associated User Manager user interface that provides the means for buyer and sellers to join an auction website and establish pertinent personal information, wherein joining causes a user account to be created and stored in a User Accounts table (in Auction Database) with a unique user ID, and the user IDs are employed by users when buying and selling; (b) an Auction Creator with User Interface for sellers that allows sellers to post information about a good as well as set the quantity and the asking price for the good; (c) an Auction Item Manager that stores the properties of an auction in a database when it is created; (d) a Bid Creator with User Interface for buyers that allows buyers to set a price for a bid on an item which may be at the asking price or be a short-bid which is less than the asking price and which becomes a contract to buy once submitted; (e) a Bid Reviewer User Interface for sellers that provides the list of short-bid contracts for the seller to review; (f) a Bid Manager that executes a sale if a bid is at the asking price posted for a good, while it collects and tracks all short-bids as bid contracts no matter how low the price bid is; (g) a Sale Executor that executes a sale between buyer and seller when a bid is placed at the asking price or when the seller decides to accept a short-bid, wherein executing a sale comprises notification to buyer and seller that the buyer’s submittal of a contract to buy must be executed; (h) an Email Notifier that sends emails to sellers and buyers constituting the notifications generated; (i) an Auction

Database that stores the User Accounts, current Auction items, current Bids, Auction History, and Bid History.

## Brief Description of the Figures

- [0008] FIG. 1 shows the Short-Bidding Auction Manager with internal subsystems and dataflow depicted.
- [0009] FIG. 2 shows the Auction Creator user interface screen.
- 5 [00010] FIG. 3 shows the Bid Creator user interface screen.
- [0011] FIG. 4 shows the Bid Reviewer user interface screen.
- [0012] FIG. 5 shows the Bid Analyzer user interface screen.
- [0013] FIG. 6 shows the Short-Bidding Auction Manager with additional internal subsystems that may be present in some embodiments of the invention.
- 10 [0014] FIG. 7 shows the tables required to store auction and bid information.

## Detailed Description

[0015] In accordance with one embodiment of the present invention, a Short-Bidding Auction Manager enables sellers to know what potential buyers will pay for a good, real or electronic, and subsequently and immediately execute on that knowledge if and when desired. In accordance with one or more embodiments of the present invention, the advantageously obtained knowledge is realized by providing the means to make each bid contractual and by providing the means to collect and track each bid so that some or all may be executed on at the seller's discretion.

[0016] The following detailed description of embodiments of the present invention employs the diagrams in FIG. 1 through FIG. 7. A typical embodiment of the present invention will comprise core internal subsystems shown in FIG. 1. Embodiments may employ any or all of, derivations of, or similar user interface screens pictured in FIG. 2 through FIG. 5. Embodiments of the present invention employ some or all of the internal subsystems and database tables that are illustrated in FIG. 1, FIG. 6, and FIG. 7.

[0017] A Short-Bidding Auction Manager fabricated in accordance with the present invention must have methods and apparatus for presenting interactive user interface screens. FIG. 1 and FIG. 6 depict a classic web application architecture where all the user interface screens are implemented as Java Servlets (each group of user interface Servlets are depicted in the shape of a bean to represent "JavaBeans") that are deployed in a Web ARchive or WAR file. These Java Servlet implementations of user interface screens will render as web pages when users employ Web Browsers to access the Short-Bidding Auction Manager Web Server. Web application deployment and user interface screen implementation using Java Servlets are well-known by those skilled in the art. However, various embodiments may choose to deploy subsystems and user interface screens without web architectures. A web architecture is shown only for illustrative purposes.

[0018] A Short-Bidding Auction Manager fabricated in accordance with the present invention must have methods and apparatus for user account management. The user account manager comprises a collection of user interfaces for registering as a new user, logging in, and

editing one's user account details. One embodiment captures a human readable User ID that will identify each user as unique. These User IDs are the monikers employed to identify buyers and sellers in auctions. Most embodiments will also maintain name information and an email address. More elaborate embodiments may include mailing address and phone numbers.

5 Embodiments that manage payments immediately will also take banking and/or credit card information. While FIG. 7 depicts a table for storing user accounts, user interface screens and a more detailed discussion of the user account infrastructure is not included here since methods and apparatus for user account management is well-known by those skilled in the art.

[0019] A Short-Bidding Auction Manager fabricated in accordance with the present invention provides sellers the ability to create new auctions for items using a user interface screen like the one pictured in FIG. 2. One embodiment of the present invention employs this simple user interface screen. This user interface screen is basic and is largely composed of the typical screen components found in auction creators that are familiar to those skilled in the art of auction software. More sophisticated embodiments may provide an ability to incorporate 10 enhancements for an auction item posting during auction creation. Such enhancements might include the ability to add pictures or videos, HTML text, categorization and sub-categorization to assist buyer searches, and other enhancements familiar to those skilled in the art of auction 15 posting.

[0020] The most notable screen components (FIG. 2) of this embodiment are the three checkboxes "forever" for duration, "infinite" for quantity, and "none" for price. Unlike typical auctions, auctions in the present invention can have a duration that lasts forever with a posted price but where short-bids are collected and potentially honored by the seller at any point in time during an indefinitely long period of time. The "infinite" quantity checkbox is employed for electronically downloadable goods where any number of purchases and subsequent downloads 20 may take place. The "none" checkbox for price allows sellers to not have to post a price at all. In this case, all bids are considered short-bids such that all bids are subject to the acceptance of the seller.

[0021] One embodiment of the present invention provides a "show highest short-bids" checkbox, as shown in the bottom left of FIG. 2. This checkbox provides the seller a means for

allowing bidders to see the highest short-bids that are currently not accepted. This can motivate potential purchasers to bid higher prices even though they plan to enter a short-bid.

Embodiments may also choose to control whether or not the quantity requested of the highest short-bids is also to be displayed, or implement to always or never display quantity information.

5 [0022] Most embodiments of the present invention will employ a derivative of the Auction Creator user interface screen to represent a very similar Auction Editor user interface screen. Such a screen will allow the seller to modify any or all auction details for an item. The posted auction item price may even be increased or decreased. Note that a decrease should cause embodiments of the present invention to execute sales transactions for any short-bids that are at 10 the new lesser price.

[0023] One embodiment of the present invention provides methods and apparatus for deleting or terminating an auction.

15 [0024] One embodiment of the present invention provides methods and apparatus for recording any or all salient events about an auction such as when it was created, when it ended, bid statistics, sales statistics, when it was modified and what was modified. Such embodiments include user interface screens for reviewing auction history.

20 [0025] One embodiment of the present invention has an Auction Item Manager like the one pictured in FIG. 1 that stores all of the information entered for an Auction Item during Auction Creation. The Auction Item Manager inserts the new Auction for the Item in the “Auctions” table when the “Start Auction” pushbutton is depressed on the Auction Creator user interface screen of FIG. 1. The Auction Item is given a unique Auction ID which the auction item row of information is keyed on in the table.

25 [0026] One embodiment of the present invention will have an Email Notifier like the one pictured in FIG. 1 that sends emails to auction users upon salient events that they need to be aware of.

[0027] One embodiment of the present invention employs a Bid Creator user interface screen like the one depicted in FIG. 3. Here the buyer enters a bid and a quantity for the item auction item desired. While FIG. 3 depicts a start and end time for the bid, the ability to enter a time interval may not be available in simpler embodiments of the present invention. FIG. 3 also

shows a “Place Another Bid” pushbutton which would allow embodiments with such a pushbutton to offer buyers a means for entering multiple bids where the bid changes depending on the time interval. Such embodiments recognize four distinct categories of bids: active bids (short-bids which are eligible for acceptance during their specified time interval), inactive 5 expired bids (short-bids which were active but which are past their end time), inactive future bids (bids which will be active when the time reaches their start time), and successful bids (bids which have been accepted and have executed the corresponding sales transaction).

[0028] One embodiment of the present invention hides the time intervals and future bid 10 adjustments from the seller of the auction item. Other embodiments may desire to provide this information to the seller or have a checkbox that allows it to be the buyer’s decision. Those skilled in the art may employ other variations.

[0029] When a new bid is placed with the “Place Bid” pushbutton, one embodiment of 15 the present invention invokes a Bid Manager as shown in FIG. 1 to first check to see if the bid is equal to the price posted for the auction item. If it is, the Bid manager recognizes that a sale must be executed immediately; otherwise the Bid Manager collects the Bid by inserting it into a Bid record into the “Bids” table. One of the columns of this table consists of the Auction ID. This allows a JOIN operation to return a view of all of an Auction item’s bids. Another column denotes the “Active Status” providing the means to filter out inactive bids that haven’t become active yet.

[0030] One embodiment of the present invention stores each short-bid in a Bids Table 20 where each Bid record maintains an Auction ID column in order to view which specific bids belong to which specific auction.

[0031] One embodiment of the present invention provides methods and apparatus for 25 recording every bid and writing them to the “Bid History” table wherein one column of each written Bid History record contains the Auction ID it belongs to. Such embodiments also include user interface screens for reviewing bid history.

[0032] One embodiment of the present invention provides methods and apparatus for recording every sale executed in the “Bid History” Table. Such embodiments also include user 20 interface screens for reviewing sales history.

- [0033] One embodiment of the present invention employs a Sale Executor as shown in FIG. 1 to execute a sale. Sale execution may follow the eBay model of notifying both the buyer and seller that the sale must now be contractually executed and that buyer must pay seller external to the auction website. Other embodiments may manage payment within the auction site by collecting payment from the buyer's credit card, bank account, or auction account and depositing the payment into the seller's credit card, bank account, or auction account. A sale may take place due to one of two types of events. The first event is when the buyer actually enters a bid equal to the posted price. The second event is when a seller at some point in time decides to accept a short-bid. This also triggers the Sale Executor to perform the sale transaction.
- 5 Embodiments with an Email Notifier will send email to buyers and sellers when the sale transaction is completed.
- 10 [0034] Embodiments may provide infrastructure and user interface screens for allowing sellers and buyers to rate each other for their transactions once they complete. Such ratings must be stored in the auction database and be available for subsequent bidder or seller filtering. In particular, some sellers may want to sell or not sell to specific bidders based on their rating even when they submit an attractively high short-bid. Various approaches for transaction rating management are well-known to those skilled in the art.
- 15 [0035] One embodiment of the present invention comprises the ability to sell electronic goods. Embodiments may provide selling of electronic goods where sellers manage the electronic good download at a separate external site, or may provide an Electronic Goods Manager as depicted in the extended internal subsystems diagram of FIG. 6. The Electronic Goods Manager stores and retrieves electronic goods when the seller desires that the auction site manage the electronic good. Embodiments providing site management of electronic goods will store them in the Electronic Goods Database, also pictured in FIG. 6.
- 20 [0036] Embodiments of the present invention supporting electronically downloadable goods can include an URL in completed sales transaction email notifications so that the buyer can click on it to download the good. Such embodiments may incorporate security methods and apparatus to guarantee that only the specific buyer can access the download. Secure approaches include unique download IDs in the URL, requiring the use to login again with the unique

download ID, and providing the downloadable electronic good for only a limited time. Various secure approaches may be employed and are familiar to those skilled in the art.

[0037] One embodiment of the present invention comprises a Bid Reviewer user interface screen as shown in FIG. 4 that provides a seller of an auction the means to review any or all bids. Such embodiments provide methods and apparatus for filtering and/or sorting bids on an auction item. While FIG. 4 depicts simple editboxes for entering a filter and sort expression, more elaborate embodiments may provide user friendly approaches comprising buttons or combobox lists with expressions, operators, and salient fields to search and sort on. Various approaches for user friendly filter and sort expression construction are well-known to those skilled in the art.

[0038] One embodiment of the present invention provides the seller an “update review list” pushbutton, as shown in FIG. 4, which is depressed once filter and/or sort expressions are set, wherein the list of bids satisfying the search expressions will be displayed on the right. Most embodiments should allow only past or current bids to be searchable. However, more

sophisticated embodiments may provide search on inactive future bids depending on the privacy policy of the auction site with respect to a seller having access to a bidder’s future plans. Most sellers will employ the Bid Reviewer user interface screen to examine some or all short-bids as depicted on the right of FIG. 4. As such, embodiments of the present invention will tend to incorporate the checkboxes next to the bids and a “Sell” pushbutton so that the seller can decide which short-bids to accept and executes sales transactions immediately. While FIG. 4 depicts specific information about each bid, different embodiments may choose to display any, all, or more information about each bid. Note that FIG. 4 also shows that more information about a bid may be displayed when a specific bid is selected. Those skilled in the art will realize that many approaches for the organization and presentation of bid information is available.

[0039] One embodiment of the present invention provides methods and apparatus for using the Email Notifier to send updated short-bid reports periodically or when a new bid is submitted. Such embodiments may provide an additional short-bid review reports notification configuration user interface screen in order to establish the frequency and/or the configuration of the report.

[0040] More sophisticated embodiments of the present invention may choose to provide method and apparatus for customizing what information is displayed in the “Review Bids” list.

[0041] One embodiment of the present invention comprises a Bid Analyzer user interface screen as shown in FIG. 5 that provides a seller of an auction the means to analyze any or all bids. As with the Bid Reviewer user interface screen, such embodiments provide methods and apparatus for filtering and/or sorting bids on an auction item. While FIG. 5 depicts simple editboxes for entering a filter and sort expression, more elaborate embodiments may provide user friendly approaches comprising buttons or combobox lists with expressions, operators, and salient fields to search and sort on. Various approaches for user friendly filter and sort expression construction are well-known to those skilled in the art.

[0042] One embodiment of the present invention provides the seller an “update analysis” pushbutton, as shown in FIG. 5, which is depressed once filter and/or sort expressions are set, wherein the list of bids satisfying the search expressions will be displayed on the right and an analysis of revenue will be displayed on the bottom. While FIG. 5 depicts an embodiment that displays a list box of bids with their quantities and project revenue along with a bar chart of revenue, other embodiments of the present invention may decide to provide analysis of a different measure, provide the ability to select one of several measures, and/or decide to provide totally different lists, graphs, and visuals for enhancing analysis.

[0043] One embodiment of the present invention links the Bid Analyzer user interface screen to the Bid Reviewer screen so that sales may be executed immediately after analysis.

[0044] One embodiment of the present invention combines the Bid Reviewer and Bid Analyzer into one user interface screen.

[0045] One embodiment of the present invention employs an existing auction site for its user account management and bid creation so that potential buyers can employ an existing auction site that they are already familiar with. Such embodiments will deploy software external to the auction site comprising the Auction Creator, Bid Reviewer, Bid Analyzer and an Auction Site Interfacer that interacts with the auction site through the auction site's published API or by HTML screen scraping coupled with HTTP GET and/or POST submittals. Such embodiments can work with other auction sites even when they don't support short-bid auctioning directly. These embodiments require that the auction site support an ability to submit bids below a seller's set price as well as below other bidders' bids. This is not possible on any of the popular auction sites when only one item is being auctioned. This is known as a Chinese auction on eBay. When supply for an item is greater than one, the requirements would somewhat be met on eBay if the site allowed reserve pricing on Dutch auctions. Note that even in this case, short-bids could not be entered once the number of bids exceeded the quantity available. As long as the number of bids is less than the quantity and below a reserve price, the external Bid Reviewer and Bid Analyzer could retrieve the short-bids and process them as described with the Bid Manager and Sales Executor external to the auction site. Those skilled in the art will recognize how to perform these activities external to the auction site.

[0046] Since the auction site owners might not like losing the sales of accepted short-bids and then ban sellers that employ an external Short-Bid Auction Management Tool, some embodiments will automatically calculate agreed upon seller transaction fees and then automatically make payments.

[0047] Those skilled in the art will recognize that the foregoing description has been presented for the sake of illustration and description only. As such, it is not intended to be exhaustive or to limit the invention to the precise form disclosed.